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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,235	08/22/2003	Dominique Billieres	1035-SC4287	9381

34456 7590 04/05/2006

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EXAMINER	
BALDWIN, GORDON	

ART UNIT	PAPER NUMBER
1775	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/646,235	BILLIERES ET AL.	
	Examiner	Art Unit	
	Jennifer C. McNeil	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/14/06 (IDS)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 41-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 41-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-10, and 41-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al (US 2002/0018921). Yamada teaches a gas plasma resistive member comprising an alumina body and a yttria coating thereon. The coating has a peeling resistance of not less than 15 MPa. Regarding the limitation of claim 1 which requires the ceramic article be free of intervening layers between the substrate and the corrosion-resistant coating, the coating of Yamada is formed directly upon the alumina substrate with no intervening layers formed there between. The reaction product formed between the yttria and the alumina is solely a byproduct of the yttria being directly deposited onto the alumina. Regarding claims 3-5, the article may be used as chamber walls in a semiconductor processing apparatus. Additionally, an example wherein there is no reacted layer present and also has an MPa of 18 is found in Table 1-4. Regarding claims 6-8, examples are given where the MPa exceeds 30. Regarding claim 9, while the method in which the yttria is deposited is not considered to structurally define the article, Yamada teaches application via thermal spray.

Regarding claims 41-43, Yamada teaches that the intermediate layer itself may comprise 80% yttria and 20% alumina (0117).

Furthermore, Yamada teaches that the material of the corrosion resistant layer may be yttria (0040). While Yamada gives examples only of yttria mixed with other oxides, it is clear that Yamada teaches that the layer may be yttria.

Additionally, Yamada teaches that the intermediate layer does not necessarily have to be present (0060).

Regarding "consisting essentially", the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original) (Prior art hydraulic fluid required a dispersant which appellants argued was excluded from claims limited to a functional fluid "consisting essentially of" certain components. In finding the claims did not exclude the prior art dispersant, the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics.). "A consisting essentially of' claim occupies a middle ground between closed claims that are written in a consisting of' format and fully open claims that are drafted in a comprising' format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998). See also Atlas Powder v. E.I. duPont de Nemours & Co., 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); In re Janakirama-Rao, 317 F.2d 951, 137 USPQ 893 (CCPA 1963); Water Technologies Corp. vs.

Calco, Ltd., 850 F.2d 660, 7 USPQ2d 1097 (Fed. Cir. 1988). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. Both the yttria and alumina coating of the prior art and the yttria coating of the instant invention have the same basis and novel characteristic of being corrosion resistant. Indeed, it appears that the article of the instant claims may include alumina and does not materially affect the basic and novel characteristic.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Otsuki (US 2001/0003271). Otsuki teaches a processing apparatus comprising a chamber for holidng a substrate, and a sprayed film formed on an inner surface of the chamber. The sprayed film comprises yttria and alumina. The ratio of alumina to yttria may be 0.5-4, or alternatively there may be twice as much yttria as alumina. Regarding claims 3-5, the inner surfaces are considered to include the walls, lid and sidewalls of the chamber. The film may be sprayed on via thermal spray (0042). As the article of Otsuki is substantially the same as that of the claimed article, and made via a similar process, the characteristics thereof are expected to be similar.

Regarding "consisting essentially", the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original) (Prior art hydraulic fluid required a dispersant which appellants argued was excluded from claims limited to a functional fluid "consisting essentially of"

certain components. In finding the claims did not exclude the prior art dispersant, the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics.). "A consisting essentially of' claim occupies a middle ground between closed claims that are written in a consisting of' format and fully open claims that are drafted in a comprising' format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998). See also Atlas Powder v. E.I. duPont de Nemours & Co., 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); In re Janakirama-Rao, 317 F.2d 951, 137 USPQ 893 (CCPA 1963); Water Technologies Corp. vs. Calco, Ltd., 850 F.2d 660, 7 USPQ2d 1097 (Fed. Cir. 1988). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. Both the yttria and alumina coating of the prior art and the yttria coating of the instant invention have the same basis and novel characteristic of being corrosion resistant. Indeed, it appears that the article of the instant claims may include alumina and does not materially affect the basic and novel characteristic.

Claims 1-11, 13, 14, and 41-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamada et al (US 2004/0067392). Yamada teaches a corrosion resistant member comprising a substrate of alumina, and a yttria/alumina coating thereon. The coating has a peeling strength

greater than 30 MPa. The coating has a grain size of 0.1-100 microns. The article may be used as a component in a semiconductor processing apparatus, such as a wall.

Regarding "consisting essentially", the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original) (Prior art hydraulic fluid required a dispersant which appellants argued was excluded from claims limited to a functional fluid "consisting essentially of" certain components. In finding the claims did not exclude the prior art dispersant, the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics.). "A consisting essentially of' claim occupies a middle ground between closed claims that are written in a consisting of' format and fully open claims that are drafted in a comprising' format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998). See also Atlas Powder v. E.I. duPont de Nemours & Co., 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); In re Janakirama-Rao, 317 F.2d 951, 137 USPQ 893 (CCPA 1963); Water Technologies Corp. vs. Calco, Ltd., 850 F.2d 660, 7 USPQ2d 1097 (Fed. Cir. 1988). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. Both the yttria and alumina coating of the prior art and the yttria coating of the instant invention have the

same basis and novel characteristic of being corrosion resistant. Indeed, it appears that the article of the instant claims may include alumina and does not materially affect the basic and novel characteristic.

Regarding claims 41-43, Yamada clearly teaches that the layer may be yttria (0075). While Yamada may give examples of yttria mixed with other oxides, the reference still clearly teaches that the layer may be yttria.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al (US 2002/0018921). Yamada teaches a ceramic article having an alumina substrate and a yttria coating thereon. Yamada teaches that the yttria may have an average particle size of 2 microns, but does not give additional sizes. Absent a showing of unexpected results, it would have been obvious to one of ordinary skill at the time of the invention to use particle sizes which would meet the required function and use. Regarding claim 12, Yamada does not expressly teach alpha alumina. Absent a showing of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice (*In re Leshin*, 125 USPQ 416).

Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al (US 2004/0067392). Yamada does not expressly teach alpha alumina. Absent a showing of unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to select a known material on the basis of its suitability for the intended use as a matter of obvious engineering choice (*In re Leshin*, 125 USPQ 416).

Regarding the grain size, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the compositional proportions taught by Yamada '392 overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

> "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Response to Arguments

Applicant's arguments have overcome the rejections over O'Donnell, and Kato.

Applicant has argued that "consisting essentially of" defines over the art of Yamada. Please refer to the arguments above for the interpretation of "consisting essentially". The phrase is not considered to define the claims over the prior art of record. Furthermore, the prior art teaches

forming the coatings in a manner similar to that of the specification. Therefore, since the materials are similar and the method of making is similar, the characteristics of the layers are expected to be commensurate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer C. McNeil whose telephone number is 571-272-1540. The examiner can normally be reached on 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer C McNeil
Primary Examiner
Art Unit 1775

JCM